

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHANG-WOO LEE

Appeal No. 2000-0653
Application No. 08/960,433

ON BRIEF

Before CALVERT, COHEN, and McQUADE, Administrative Patent Judges.

COHEN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 2, 6, and 9. These claims constitute all of the claims remaining in the application.

Appellant's invention pertains to a kinetic pressure fluid bearing apparatus. A basic understanding of the invention can be derived from a reading of exemplary claim 1,

Appeal No. 2000-0653
Application No. 08/960,433

a copy of which appears in the APPENDIX to the brief (Paper No. 12).

As evidence of obviousness, the examiner has applied the documents listed below:

McQuaid et al. (McQuaid)	1,469,424	Oct.
2, 1923		
Kameyama	5,277,499	Jan. 11,
1994		

The following rejection is before us for review.

Claims 1, 2, 6, and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kameyama in view of McQuaid.

The full text of the examiner's rejection and response to the argument presented by appellant appears in the final rejection and the answer (Paper Nos. 6 and 13), while the complete statement of appellant's argument can be found in the main and reply briefs (Paper Nos. 12 and 14).

Appeal No. 2000-0653
Application No. 08/960,433

OPINION

In reaching our conclusion on the obviousness issue raised in this appeal, this panel of the board has carefully considered appellant's specification and claims, the applied teachings,¹ and the respective viewpoints of appellant and the examiner. As a consequence of our review, we make the determination which follows.

We do not sustain the rejection of appellant's claims.

Independent claim 1 addresses a kinetic pressure fluid bearing apparatus having a rotary shaft positioned to rotate within a through hole of a sleeve that is mounted on a bearing

¹ In our evaluation of the applied prior art, we have considered all of the disclosure of each document for what it would have fairly taught one of ordinary skill in the art. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966). Additionally, this panel of the board has taken into account not only the specific teachings, but also the inferences which one skilled in the art would reasonably have been expected to draw from the disclosure. See In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Appeal No. 2000-0653
Application No. 08/960,433

bracket and a thrust bearing having a surface facing an end of said shaft, said thrust bearing having a first kinetic pressure generating groove on a surface thereof which faces said end of said shaft; the improvement comprising, inter alia, a clearance supporting means that provides a clearance of several μm between the end of the shaft and the thrust bearing surface when the shaft is rotating, and wherein the clearance supporting means comprises a first ball inserting groove formed on one surface of the thrust bearing and said end of the shaft, and a ball inserted into the first ball inserting groove.

We turn now to the evidence of obviousness.

The patent to Kameyama is clearly a highly relevant prior art teaching with respect to the kinetic pressure fluid bearing apparatus now being claimed. Having said that however, as recognized by the examiner, the Kameyama patent clearly lacks a ball inserting groove and inserted ball as now claimed. As articulated in the rejection, the noted deficiency in the Kameyama disclosure is asserted by the

Appeal No. 2000-0653
Application No. 08/960,433

examiner to be overcome by the obvious substitution of the ball and grooves of McQuaid in the dynamic pressure bearing apparatus of Kameyama.

As explained more fully below, the basic difficulty that we have with the proposed combination of prior art teachings is that the modification of the Kameyama apparatus would only have been suggested by appellant's underlying specification and not by the reference teachings themselves.

As we see it, each of Kameyama and McQuaid teach distinctly different approaches in establishing a thrust bearing arrangement for a rotating shaft.

Kameyama discloses a dynamic pressure bearing apparatus wherein the shaft at rest, at initial startup, or when subjected to an external disturbing force, may come into contact with a thrust receiver surface 32 of insert member 28; otherwise, during normal operation the end of the shaft is intended to be in a non-contact state or relationship relative to the insert member. Patentee Kameyama's intent in providing one of the shaft end surface and the thrust receiving surface

with a convex shape form is to prevent striking of a peripheral edge of the shaft end with the surface of the insert member 8, without having to engage in high precision machining to obtain a high degree of square on the end surface of the shaft and the thrust receiver surface (column 1, lines 64 through 68 and column 2, lines 17 through 22 and 32 through 35).

Distinct from the apparatus of the Kameyama patent, the McQuaid reference teaches an end thrust ball bearing wherein the end of a rotary shaft 9 (Fig. 1) or a rotatable plate 26 as in Fig. 6 (engaged by the end of a rotary shaft) is continuously engaged with a ball 8 positioned in a recess or seat 22 of a plate 19.

Considering the circumstances that Kameyama and McQuaid may fairly be said to teach alternative thrust bearing arrangements, i.e., fluid bearing vs. ball bearing, and that Kameyama expressly discloses making a convex thrust receiver surface 32 a part of an insert member 28, it is our opinion that one having ordinary skill in the art would not have

Appeal No. 2000-0653
Application No. 08/960,433

derived a suggestion from the applied evidence of obviousness to modify the apparatus of Kameyama, as proposed by the examiner. It is for this reason that the rejection on appeal cannot be sustained.

The decision of the examiner is reversed.

REVERSED

Appeal No. 2000-0653
Application No. 08/960,433

IAN A. CALVERT)	
Administrative Patent Judge)	
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IRWIN CHARLES COHEN)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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JOHN P. McQUADE)	
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Appeal No. 2000-0653
Application No. 08/960,433

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APPEAL NO. 2000-0653 - JUDGE

APPLICATION NO. 08/960,433

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DECISION: **REVERSED**

Prepared By:

DRAFT TYPED: 26 Mar 02

FINAL TYPED: